Incorporating archaeological information in woodland management in South Yorkshire

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Introduction

South Yorkshire Archaeology Service (SYAS) are the archaeological advisers to the local authorities and other organisations working within the county of South Yorkshire (Figure 1). The service provides advice on all aspects of protection and conservation of the archaeological heritage. This advisory role includes agri-environment matters, such as Countryside Stewardship and forestry works. We are also consulted by South Yorkshire Forest Partnership on management plans and related issues.

This paper describes the results of a project to survey and map the archaeological features within ancient woodlands, which will enhance management advice for them. The survey is still underway and this is a statement of work in progress.

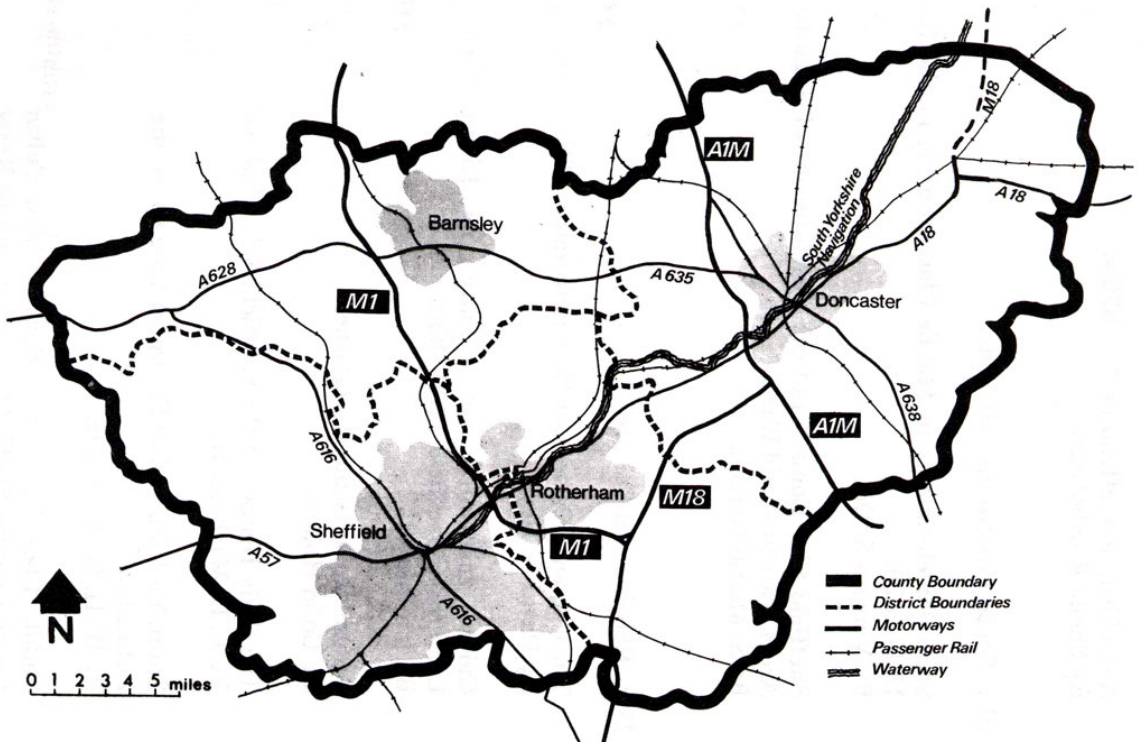

Figure 1 Boundary and main settlements in South Yorkshire

"Fuelling a Revolution - the Woods that founded the Steel Country"
Industrial South Yorkshire is not often associated with major woodlands, but Sheffield is the most wooded city in England, with 10% of the city under woodland (Forestry Commission National Inventory of Woodlands 2000-1). Many of these woods and woodland products have played a crucial part in the development of industry in the county in the mediaeval and post-mediaeval periods.

The archaeological survey of over 30 ancient woodlands in South Yorkshire, covering over 400ha, was carried out under the auspices of the "Fuelling a Revolution - the Woods that founded the Steel Country" project. This was financially supported by the Heritage Lottery Fund (HLF) and co-ordinated by South Yorkshire Forest Partnership. The project began in 2000 and aims to facilitate the re-introduction of active management into woodlands that have been under-managed for much of the last 100 years.

This major aim - the re-introduction of management to more than 30 ancient woodlands - will be through a combination of site management and infrastructure improvements, closely linked to a programme of education and interpretation project work (Table 1). It will be under-pinned by community consultation and involvement and by detailed management plans for each site.

- Restore the landscape and heritage importance of the woodlands
- Protect their historical value … through sustainable woodland management
- Survey and record as a basis for management work
- Interpret the landscape heritage … of the woodlands for the local community and visitors
- Provide educational resource for local schools

Table 1. Main aims of the Fuelling a Revolution project

The Project extends across all of the South Yorkshire Forest Partnership area to include ancient woodlands owned by the local authorities in Barnsley, Rotherham and Sheffield. Overall, £1.5million has been awarded by the HLF across the Project area which, with matching funding from the partners brings the total project costs to £2million. As part of the Project, full archaeological survey of all the sites in the South Yorkshire Forest Partnership area was proposed, comprising at least 4 woods in Rotherham, 23 in Sheffield, and 4 in Barnsley.

The Archaeology of Woodlands

Woodlands contain a wide variety of archaeological remains. These can be grouped into two basic types: the archaeology **of** woodlands and the archaeology **in** woodlands. The archaeology **of** woodlands are those features specifically related to woodlands. Examples might be historic woodland boundaries, charcoal burning kilns, managed trees (pollards, coppice). They exist because the wood exists; they are the physical remains of past woodland use. Archaeology **in** woodlands might include anything from prehistoric monuments to industrial period features, such as bell pits: sites that are contained by the woodland but only because of a co-incidence of location. Many will even pre-date the woodland.

Whatever their nature and origin, all monuments and features will be affected in some way by woodland management and can affect the direction and manner in which woods are managed. Knowledge that significant archaeological features exist can be taken into account when planning management, such as tree felling and path improvement. This can then be done in a manner that minimises or removes threats to features.

The important pioneering work of Mel Jones (1986, 1989) in the 1980's demonstrated the archaeological potential of woodlands (and ultimately helped in securing support from the HLF). However, most of the woodlands within South Yorkshire had had little or no formal survey prior to the Project commencing, so our knowledge of such archaeological features was partial and mostly inadequate. Many woodlands had very few **known** remains: most had none. Therefore, the first step to protecting archaeological remains was in identifying their location and nature: this was the primary purpose of the survey.

Methodology

The primary purpose, to provide good basic information that could feed into management planning and implementation, was achieved by a staged approach. It started with an initial review of sources, followed by archaeological field survey of the woodlands. The survey included both rapid walk-through survey and (where appropriate) more detailed measured survey.

Each stage was guided by a detailed brief, prepared by the Archaeology Service and supplied to the appropriate woodland officer, who acted as the client for the survey work on behalf of their authority. This brief was supplied to contractors

who submitted tenders and a project design. All survey work was monitored by SYAS on behalf of the authority.

Review and assessment stage
A desk-based assessment (e.g. Coutts 1996) was prepared by an archaeological consultant to assess the present state of information about the woodlands. This reviewed all available sources, such as the Sites and Monuments Record, museum records and archive sources. The resulting report drew together and summarised this information, identifying known and likely sites within each woodland.

Rapid walk-through field survey stage
Using information from the desk-based assessment, archaeological surveyors carried out a rapid walk-through survey of each woodland. They recorded all remains from all periods, since there is no hierarchy of importance at this stage. For survey purpose, it is clear that an abandoned early 20th century industrial building is no less important than prehistoric earthworks nearby. The surveyors also recorded areas or individual examples of previous woodland management, such as pollards or coppice stools. Finally, the surveyors they were required to record any areas of damage or potential threat that was observed.

An assessment of relative importance was made, using the methodology developed by Keen and Carreck (1987). This aimed to assess whether the features were of national, regional or local importance and suggest an appropriate level of management (Table 2).

Findspots were noted in desk-based assessment but were generally not included in the results of survey as they are unlikely to have visible traces on ground.

- **Level I** Features of special (i.e. national/regional) importance warranting greatest possible protection
- **Level II** Archaeological and historical features of lesser (i.e. local) importance
- **Level III** Former archaeological and historical features of special importance for which … no coherent archaeological remains … are recoverable
- Additional codes - add "B" if damaged or destroyed
- Add * if confident of type of monument

Table 2. Levels of importance (after Keen and Carreck 1987).

The survey was made by archaeologists walking in transects, at regular spacings through each woodland compartment in turn. The compartments used did not necessarily coincide with the forestry compartments, defined by vegetation. In this case, the archaeological compartments were defined by ground feature (such as footpaths) as a means of assisting the determination of location in the early stages of the survey.

As features were identified, they were marked and rapidly recorded. A survey recording form was completed and the feature sketch-plotted. A brief text description was made and any relationship to other features noted. The location of each feature was determined by Global Positioning System (GPS). For this, the survey team were provided with digital mapping data loaded into the GPS. Following each day of survey, the GPS data was downloaded into a database and plotted directly onto a computer mapping system. After completion of the survey, the field data was transferred to a database, collated and analysed, and a report prepared.

For most features, no further survey would be done, so it was important that the report was as comprehensive and useable as possible (see more detailed discussion of the report below).

Measured field survey

The report also contains recommendations of features which warrant further more detailed survey. These recommendations were jointly considered and discussed by the surveyors, the woodland officers and SYAS. Following agreement, measured survey by electronic methods was carried out. The measured survey produces a comprehensive analysis of the selected features with a measured hachured plan, allowing more detailed management considerations to be undertaken.

To summarise, **all** of **every available** part of woodland was surveyed by walk-through survey. Selected parts of some woods had further detailed measured survey. However, some small parts were not surveyed because they were not accessible, mainly because of a dense understorey. The boundaries of these areas were also recorded, since it is important to know that these areas were not surveyed, and to build this into management planning.

Results

This is clearly the most extensive woodland survey yet carried out in the county. By the time the whole HLF Project is completed, 4 woods in Barnsley, 4 in Rotherham and 23 in Sheffield will have been surveyed, a total area of over 400ha. As already noted, SYF co-ordinated the HLF bid and managed the project overall. However, the individual project elements, including archaeological survey, were implemented by the local authorities themselves. The surveys have thus progressed at different rates. To date (summer 2003),

only the Sheffield survey has had both walk-through and measured survey completed. The Rotherham walk-though survey has just finished and the Barnsley survey is not yet underway, although the desk-based assessment will be carried out in the near future. Because of this, the following analysis is a rapid review of the results of the Sheffield survey only.

Analysis

A total of 255ha of woodland was surveyed in Sheffield. The review of sources in the desk-based assessment identified 41 sites. By end of the survey, 584 archaeological features had been identified, a more than ten-fold increase. Only 3 monuments were assessed as Level I in importance - these being the woodland boundary bank in Rollestone Wood, Gleadless Valley, South Sheffield; the Romano-British field settlement in Wheata Wood, north Sheffield and the late prehistoric hill fort of Wincobank Wood, north east Sheffield. The latter two are already Scheduled Ancient Monuments. The majority of the others were given level II status.

There is a difficulty in assessing monuments by period from the initial survey. Various banks and linear ditched features were recorded whose age could not be determined. However, typological details suggest that the majority of the features are post-mediaeval in date.

Woodland-related features, such as Q-pits and charcoal platforms were recorded. Q-pits were for the production of “white coal”, dried wood used in lead smelting, and are common in some woods in the west side of Sheffield. Examples were recorded in Buck Wood and Carr, Ashes and Coneygree Woods, all in the Gleadless Valley. An example from Ashes Wood was subject to a detailed measured survey (Figure 2).

Charcoal was produced as a fuel for the iron industry and charcoal platforms were found in Buck, Glen Howe Park, Wheata and Wincobank woods. One particularly well-preserved example in Buck Wood was selected for more detailed survey.

The majority of features identified relate to extractive industries, principally mining and quarrying of coal, ironstone and sandstone.

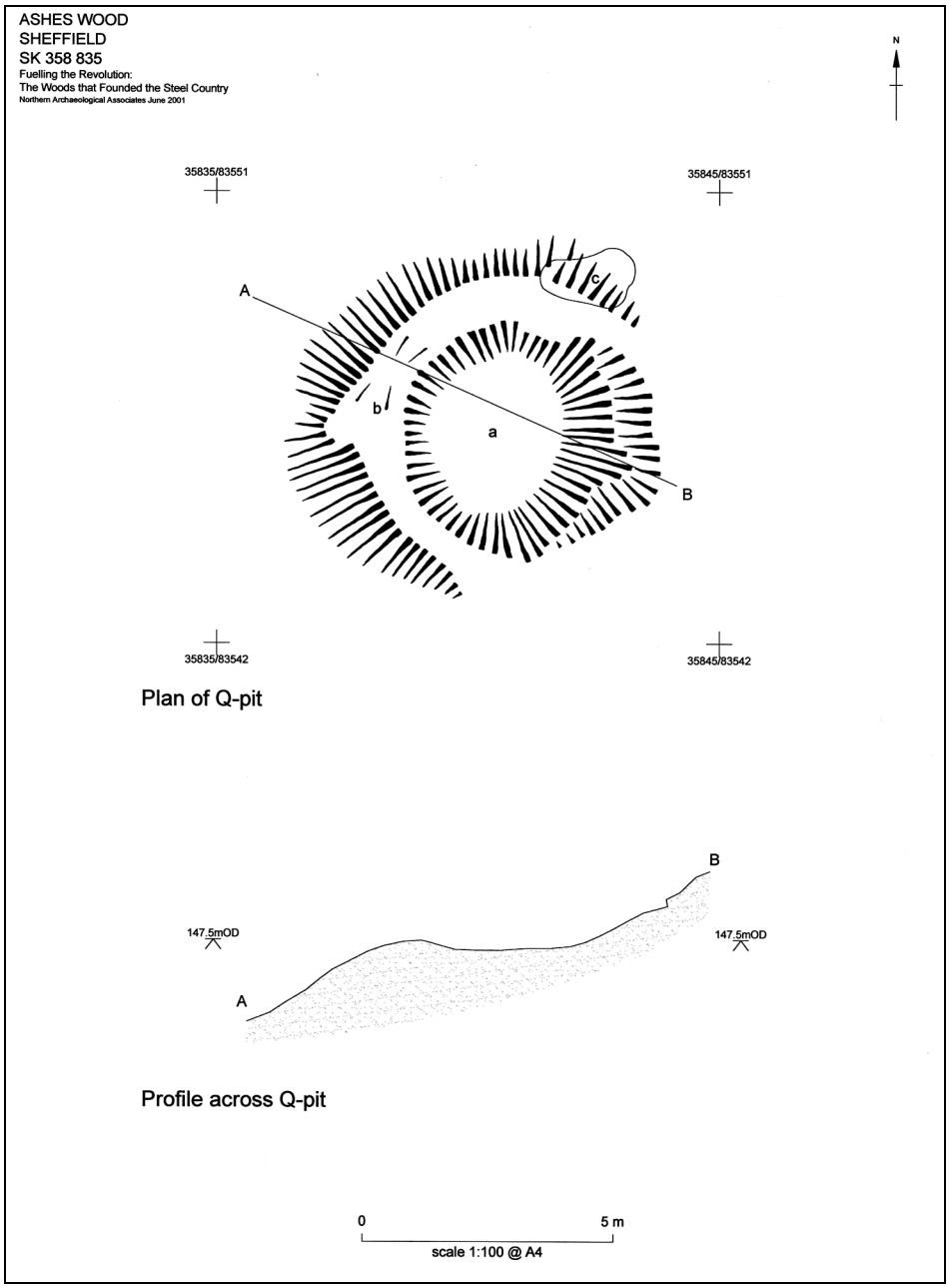

Figure 2 Detailed survey of Q-pit, Ashes Wood

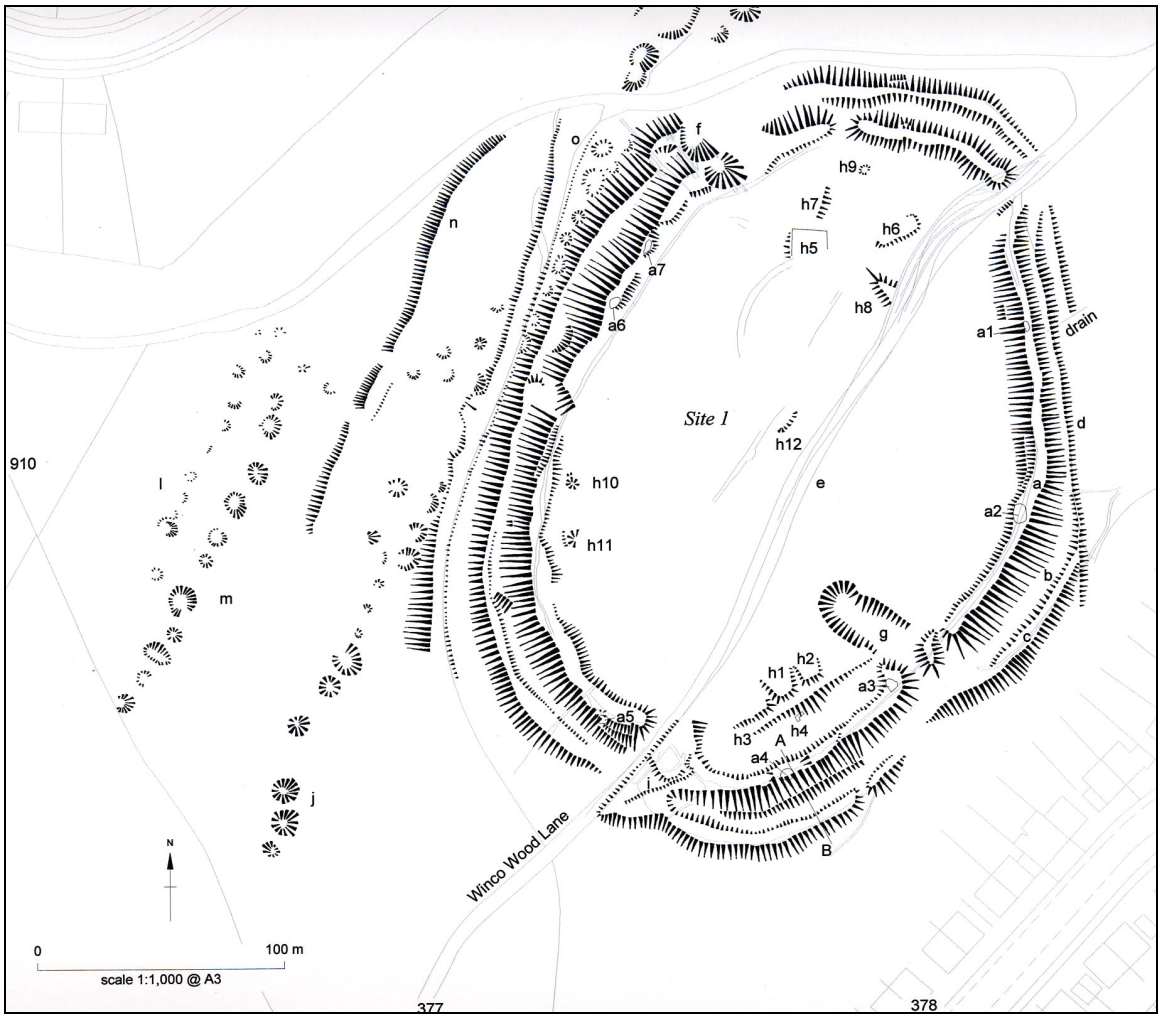

Figure 3 Winco Bank Wood - detailed survey of prospection pits and hill fort

Pits for coal and ironstone, probably related to extraction on the Duke of Norfolk's estates from the 17th century onwards, were recorded on Wincobank (Figure 3). Extensive complexes of mounds, bell-pits, and other earthworks were recorded at Thorncliffe Wood (Figure 4). These were part of a much larger industrial landscape outside the wood linked to the former Thorncliffe drift colliery, north east Sheffield. In Thorncliffe, this demonstrated that not all of the woodland was "ancient" woodland, as had previously been assumed (see *Sellwood and McNeil, forthcoming* for a discussion of this).

Virtually all of the woodlands had irregular pits interpreted as quarry pits. Probably many of these were for stone for nearby drystone walls. However, formal quarries for quarrying of sandstone were also recorded in a number of woodlands.

Figure 4 Thorncliffe Wood - earthwork survey of mining remains

Presentation of data

The purpose of this fieldwork was clear from the outset: to provide enough basic information to allow consideration of the archaeological features within the woodland to be incorporated into the renewal of management of the woodlands. It also had to be available to be used in fulfilling the wider aims of the Fuelling a Revolution project: management, education, restoration, protection and interpretation. Finally, as always, it should be of value to the wider archaeological community as a source for further research and interpretation. The individual woodland officers, charged with managing the woodlands, and the education community, including teachers and the project's own Heritage Interpretation Officers were the main intended end-users. The data had to be in a format that would be accessible and useable by all. It was therefore presented as an interpretive report and associated data sets.

Report

The format of the report was the subject of some discussion. The contractor submitted a draft report relatively soon after completion of the survey, with a

suggested format. The final format was settled on as the most useful as a management tool, in that it is accessible to all users.

Starting with a general project description, the report then describes the methodology used, including map preparation, survey and recording strategies, data processing and project archiving. The survey results for each woodland are then described in turn. The general historical and physical background are discussed, a table listing all features in each compartment is included, after which there is a detailed description of the walk-through survey by compartment, describing features or groups of features.

Some analysis of archaeological feature types was made, discussing the nature and period, where possible. Importantly, a listing of observed damage, possible threats to features and the assessment of the level of importance was given.

Following this, the rapid survey report highlighted areas that were appropriate for more detailed measured survey. In the majority of cases, this applied to particularly significant features that had been identified. As such, measured survey was undertaken on a number of features within various woodlands and an associated additional report produced.

Digital data

The brief carried a requirement for digital data to be supplied. As was mentioned above, field data was transferred to an access database following field survey. The locational information had been collected electronically by GPS. This data was supplied to SYAS and the client as an Access database file, which can be used in a number of ways, including being directly imported into a number of software packages. The plots of field features were supplied as CAD export files, also capable of being imported into MapInfo, the GIS used by SYAS.

Use of Information

The report is the most immediate and useable product of the survey and is a tool which now forms a standard reference for the woodland officers. The heritage interpretation officers of the Fuelling a Revolution project have also drawn on the reports to produce information packs, for use in school projects. These are tied in to Key Stage requirements in the National Curriculum. As well as the survey results, the summary information included in the reports is particularly useful here.

Where there is access to digital mapping systems, the two sources can be used together. At a simple level, the digital data can be imported into a GIS, allowing accurate plotting of features. This can allow woodland staff to see very quickly if there are any known features in an area proposed for management. The cross-reference of the field code number allows rapid consultation of the report, to identify any concerns there may be.

The reports are held in the Sites and Monuments Record for public consultation. In the future, the digital data will also be imported into the SMR , allowing access to the data for wider projects, such as the review of scheduled monument boundaries. The is also immediately available to inform archaeological advice in preparing new management plans for these woodlands.

The industrial heritage of South Yorkshire is a very important area of study. The results of these surveys will provide an important complimentary area of study to the work that has been carried out on excavation of the industrial sites, as well as buildings and archives. Summaries of the results will also be included in our annual review "Archaeology in South Yorkshire" and spread further through the abstracting services of the British and Irish Archaeological Bibliography (BIAB).

Conclusion

To conclude, where are the successes and problems of this work? These can be tabulated briefly.

Successes:

- New recognition in some quarters that "proper" archaeological survey is as important as "proper" ecological survey.
- Promotion of partnership approach to work with woodland colleagues.
- Identification of less than ancient forest - e.g. Thorncliffe Woods.
- Digital data gathering - in future, this will be standard practice.

Problems:

- Having gathered the digital data, we had to figure out how to deal with it.
- Survey - dealing with project designs with widely differing estimates of time and costs needed for survey.
- Scrub areas - how to deal with the un-survey able.
- Timing of survey - some got too close to a period when survey was not possible because of growth of under-storey.

We now have a large number of woodlands with well-understood archaeology. Together, the report and digital data form a very powerful management tool. The information is easily accessible and understandable by all key staff. They can rapidly identify any potential threats to features and discuss these with SYAS.

Our next task is to look more carefully at how we use this information. Discussion between all of South Yorkshire's woodland officers, representatives of SYF and SYAS have agreed certain basic principles. We will aim to set up procedures that enable minor management works to go ahead without having to consult SYAS, drawing on the information available in the survey report. SYAS will then concentrate on the major management proposals which need more active archaeological input.

Bibliography

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Websites

For more general information on archaeology in South Yorkshire, see our web-site at http://www.sheffield.gov.uk/in-your-area/planning-and-city-development/urban-design--conservation/archaeology

For more information on the Fuelling a Revolution Project, look at the web-site: http://www.heritagewoodsonline.co.uk/

South Yorkshire Forest Partnership is at http://www.syforest.co.uk

Questions

Who are the contractors who undertook the survey?
Northern Archaeological Associates, who have a good amount of woodland experience. West Yorkshire Archaeology Service is also doing some work in woodlands in Yorkshire.

Did you involve the local community in actual survey?
No. Community involvement is part of the wider project to bring the woodlands back into management.

Is Heritage Lottery Funding just for the archaeological survey or for the wider project?
Heritage Lottery Funding is for the whole wider project. The need to include archaeology in this was emphasised from an early stage.

Did you have partners in the Heritage Lottery Fund bid?
Yes - Local Authorities and South Yorkshire Forest were partners in the bid.